

I B.Tech Regular Examinations, June 2008

ENGINEERING DRAWING

(Common to Bio-Medical Engineering, Information Technology, Electronics
& Telematics and Instrumentation & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Two points A and B are 50 mm apart. Draw the curve traced out by a point P moving in such a way that the difference between its distances from A and B is always constant and equal to 20 mm. [16]
2. Two points P and Q are in the H.P. The point P is 30 mm in front of V.P. and Q is behind the V.P. The distance between their projectors is 80 mm and line joining their top views makes an angle of 40^0 with xy. Find the distance of the point Q from the V.P. [16]
3. A line AB, 80 mm long, makes an angle of 30^0 with the V.P. and lies in a plane perpendicular to both the H.P. and the V.P. Its end A is in the H.P. and the end B is in the V.P. Draw its projections. [16]
4. Draw the projections of a circle of 75 mm diameter having the end A of a diameter AB in the H.P., the end B in the V.P., and the surface inclined at 30^0 to the H.P. and at 60^0 to the V.P. [16]
5. (a) A square pyramid, base 40 mm side and axis 65 mm long, has its base in the V.P. One edge of the base is inclined at 35^0 to the ground and a corner contained by that edge is on the ground. Draw its projections.
(b) A tetrahedron of 5 cm long edges is resting on the ground on one of its faces, with an edge of that face parallel to the V.P. Draw its projections and measure the distance of its apex from the ground. [8+8]
6. A pentagonal pyramid, base 25 mm side and axis 75 mm long has one of its triangular faces in the V.P. and the edge of the base contained by that face makes an angle of 30^0 with the H.P., Draw its projections. [16]
7. Draw the isometric view of the object whose orthographic projections are shown in figure 7. All dimensions are in mm. [16]

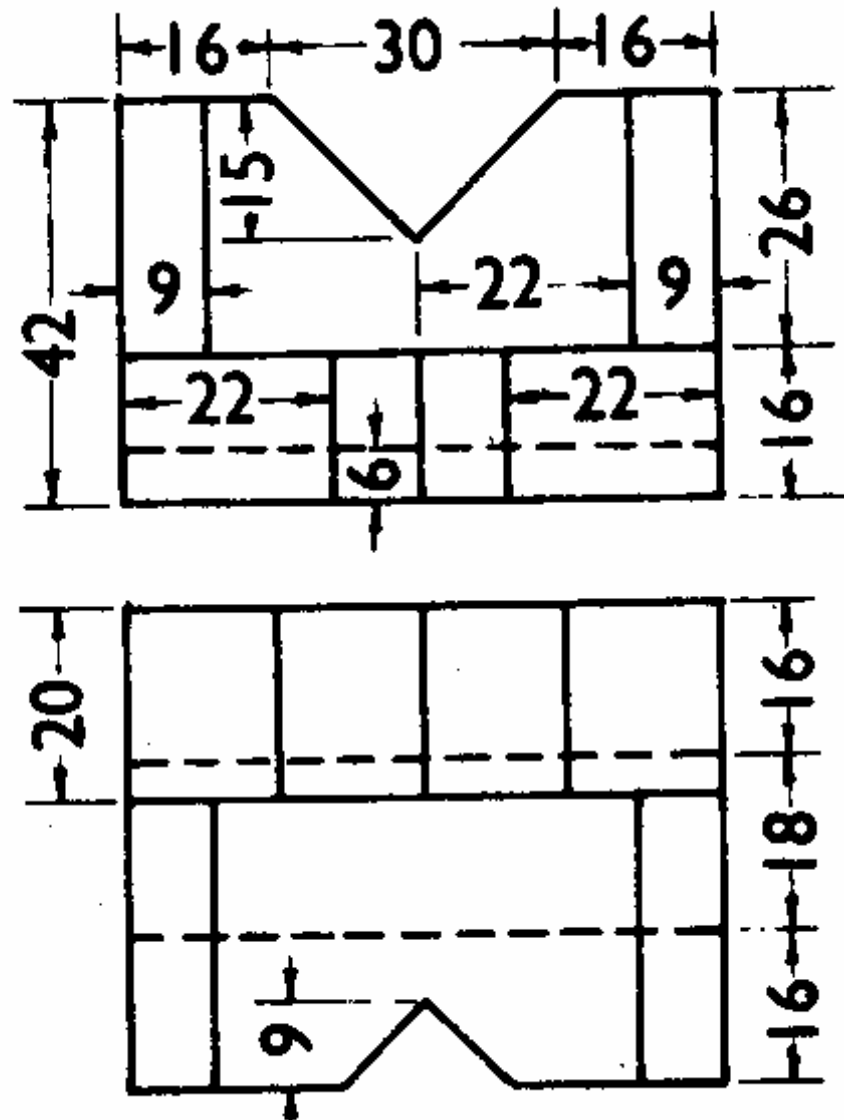


Figure 7

8. Draw the orthographic projections for the given isometric view figure 8. All dimensions are in mm. [16]

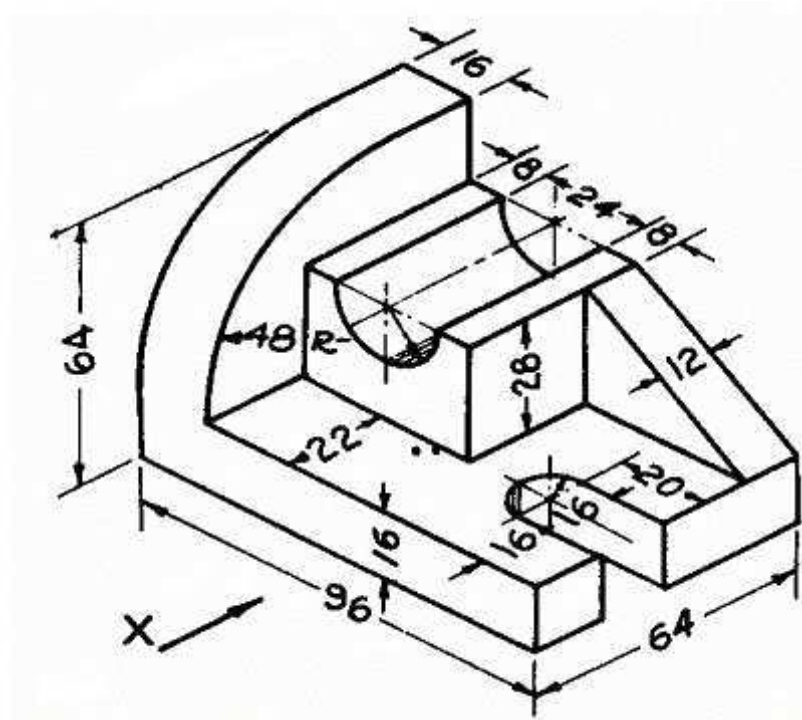


Figure 8

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1. Draw a straight line AB of any length. Mark a point F, 75 mm from AB. Trace the paths of a point P moving in such a way that the ratio of its distance from the point F, to its distance from AB is 3:2. Plot at least 8 points. Name the curve. Draw a normal and a tangent to each curve at a point on it, 50mm from F. [16]
2. Show by means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 60 mm. [16]
3. The front view of a 125 mm long line PQ measures 80 mm and its top view measures 100 mm. Its end Q and the mid-point M are in the first quadrant, M being 20 mm from both the planes. Draw the projections of the line PQ. [16]
4. Draw the projections of a circle of 60 mm diameter resting on the ground on a point A on the circumference, its plane inclined at 45^0 to the H.P. and the top view of the diameter AB making 30^0 angle with the V.P. [16]
5. A hexagonal pyramid, base 25 mm side and axis 65 mm along, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallels to the V.P. Draw its projections. [16]
6. A square pyramid, base 40 mm side and axis 90 mm long, has a triangular face on the ground and the vertical plane containing the axis makes an angle of 45^0 with the V.P., Draw its projections. [16]
7. Draw the isometric view of the object whose orthographic projections are shown in figure 7. All dimensions are in mm. [16]

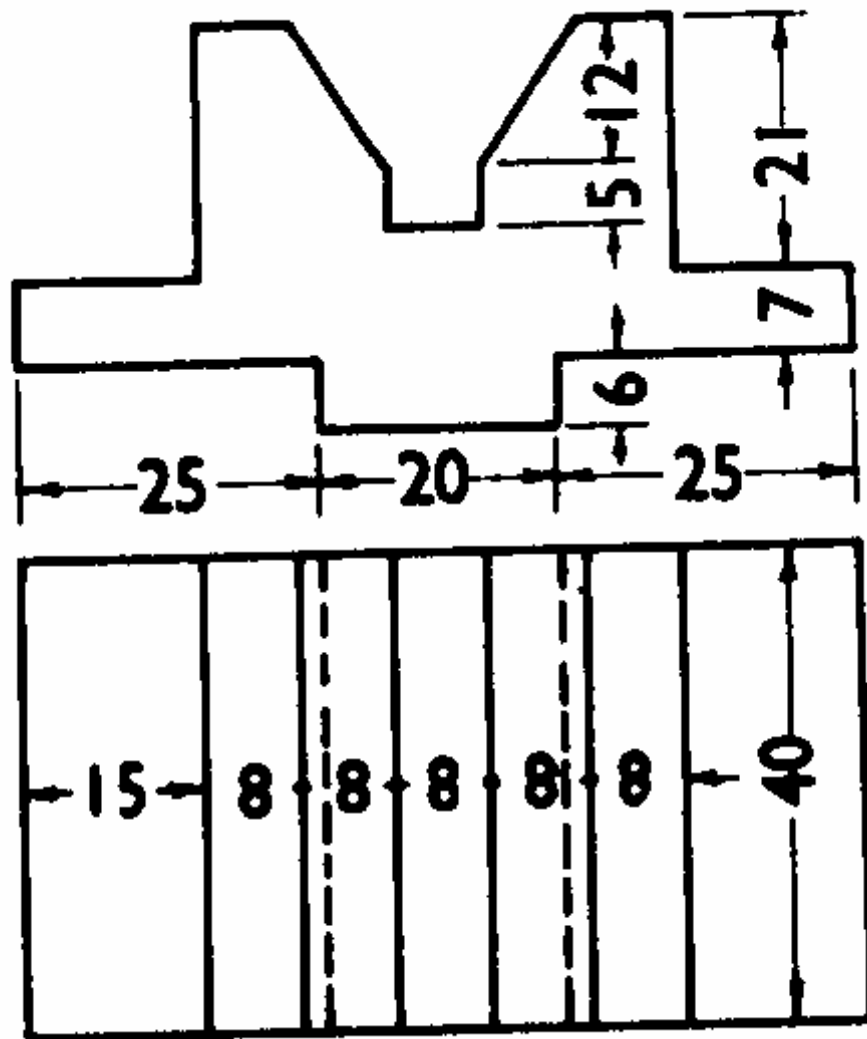


Figure 7

8. Draw the orthographic projections for the isometric view shown in figure 8. All dimensions are in mm. [16]

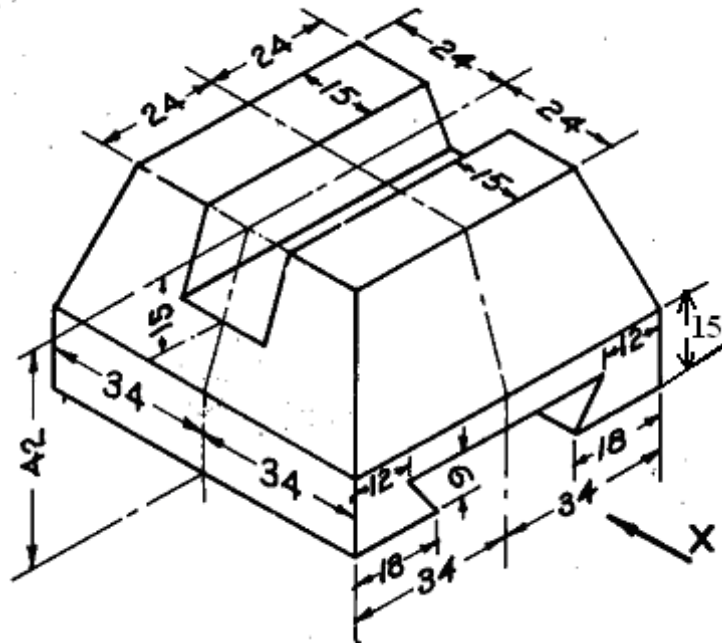


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1. The major axis of an ellipse is 150 mm long and the minor axis is 100 mm long. Find the foci and draw the ellipse by 'arcs of circles' method. Draw a tangent to the ellipse at a point on it 25 mm above the major axis. [16]
2. A 95 mm long line is parallel to and 50 mm above the H.P. Its two ends are 20 mm and 50 mm in front of the V.P. respectively. Draw its projections and find its inclination with the V.P. [16]
3. The front view of a 125 mm long line PQ measures 80 mm and its top view measures 100 mm. Its end Q and the mid-point M are in the first quadrant, M being 20 mm from both the planes. Draw the projections of the line PQ. [16]
4. A semi-circular plate of 80 mm diameter has its straight edge in the V.P. and inclined at 45^0 to the H.P. The surface of the plate makes an angle of 30^0 with the V.P. Draw its projections. [16]
5. Draw the projections of a cylinder 75 mm diameter and 100 mm long, lying on the ground with its axis inclined at 40^0 to the V.P. and parallel to the ground. [16]
6. One of the body diagonals of a cube of 45 mm edge is parallel to the H.P. and inclined at 45^0 to the V.P., Draw the front view and the top view of the cube. [16]
7. Draw the isometric view of the object whose orthographic projections are shown in figure 7. All dimensions are in mm. [16]

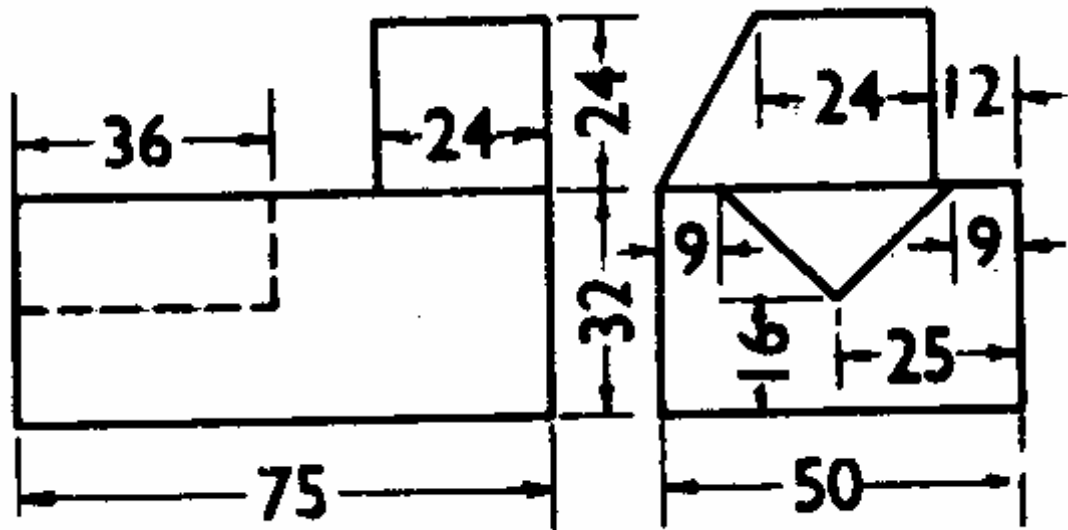


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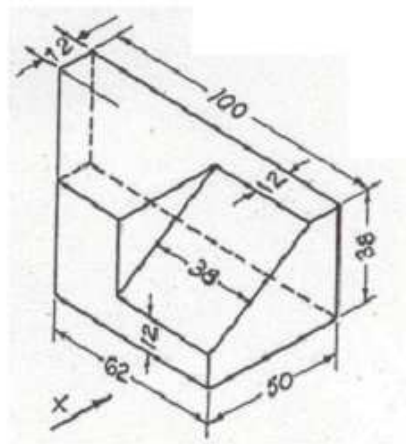


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1. A point P is 30 mm and 50 mm respectively from two straight lines which are at right angles to each other. Draw a rectangular hyperbola from P within 10 mm distance from each line. [16]
2. Show by means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 60 mm. [16]
3. A line AB, 80 mm long, makes an angle of 30^0 with the V.P. and lies in a plane perpendicular to both the H.P. and the V.P. Its end A is in the H.P. and the end B is in the V.P. Draw its projections. [16]
4. A plate having shape of an isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that in the front view it is seen as an equilateral triangle of 50 mm sides one side inclined at 45^0 to xy. Draw its top view. [16]
5. Draw the projections of a cylinder 75 mm diameter and 100 mm long, lying on the ground with its axis inclined at 40^0 to the V.P. and parallel to the ground. [16]
6. One of the body diagonals of a cube of 45 mm edge is parallel to the H.P. and inclined at 45^0 to the V.P., Draw the front view and the top view of the cube. [16]
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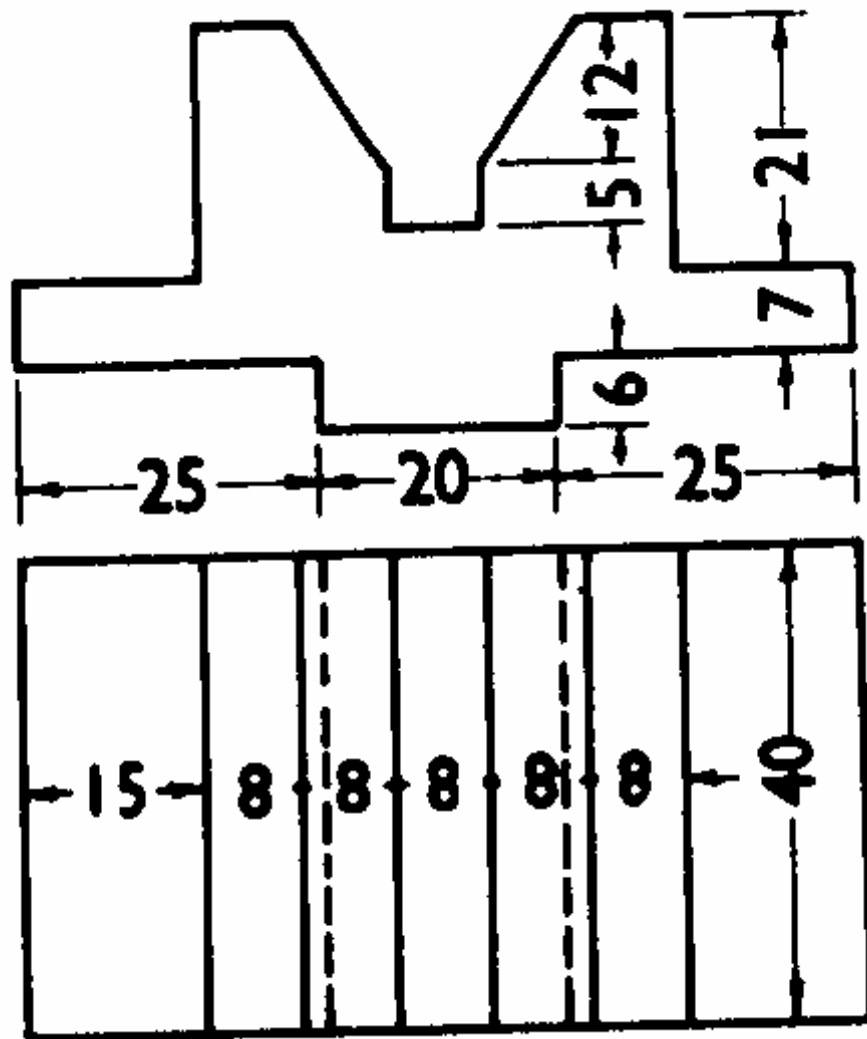


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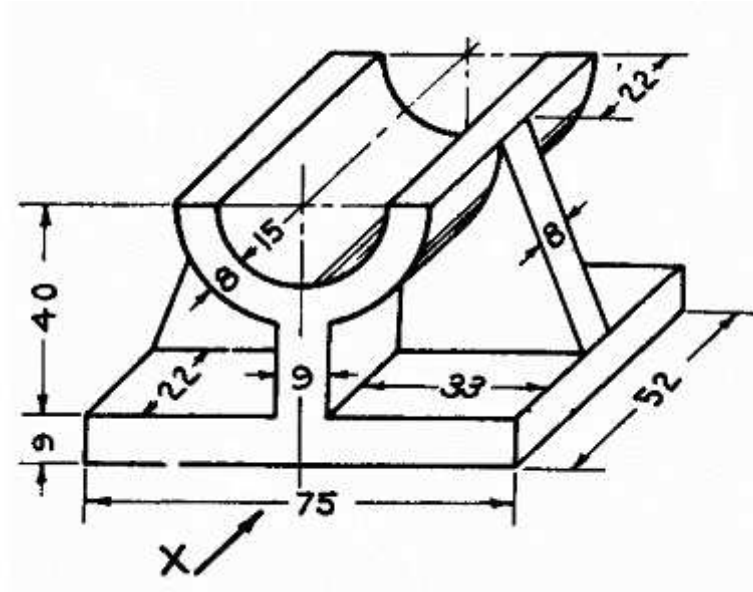


Figure 8
